AMENDED CLAIMS

1-15 Canceled

16. (currently amended) A downhole injection evaluation system comprising:

(a) at least one downhole fiber optic sensor permanently disposed a first well for sensing at least one parameter associated with injecting a fluid into a formation;

(b) at least one additional downhole fiber optic sensor in a second well, the at least one additional sensor operably connected to the at least one fiber optic sensor in the first well;

wherein said first well is ~~selected from~~ one of (I) an injection well, and (II) a production well and the second well is the other of (I) an injection well, and (II) a production well..

17. (currently amended) A downhole injection evaluation system as claimed in claim 16 wherein said system further includes an electronic controller operably connected to ~~said~~ at least one of the downhole fiber optic ~~sensor~~ sensors.

18. **canceled**

19. (previously presented) A system for controlling hydrocarbon production comprising:

a) a production well;

b) an injection well having a data link to said production well ;

c) at least one sensor located in either of said injection well and said production well, said at least one sensor being capable of sensing at least one parameter associated with an injection operation, said sensor being operably connected to a controller for controlling injection in the injection well.

20. **canceled.**

21. (currently amended) A downhole injection evaluation system as claimed in ~~claim 17~~ claim 16 wherein said system further includes at least one downhole acoustic signal generator whereby signals generated by said at least one signal generator reflect off a flood fluid/hydrocarbon interface and are received by ~~said~~ at least one of the downhole ~~sensor~~ sensors.

22-59. **canceled**

60. Canceled

61. (currently amended) The system of claim 17 wherein said electronic controller is at one of (i) a surface location, and (ii) a downhole location..

62. **canceled**

63. **canceled**

64. (currently amended) The system of ~~claim 18~~ claim 16 wherein said sensor in said first well is operably connected to said sensor in said second well by a fiber optic link.

65. (currently amended) The system of ~~claim 63~~ claim 16 further comprising a controller ~~for controlling~~ which controls a flow control device in at least one of the first well and the second well.

66. (previously presented) The system of claim 65 wherein said flow control device is selected from the group consisting of: (i) a valve, (ii) fluid control device, (iii) packer, (iv)sliding sleeve, (v) safety valve, (vi) an anchor, and (vii) a pump.

67. (currently amended) The system of ~~claim 63~~ claim 21 further comprising an acoustic receiver in at least one of the first well and the second well.

68. **canceled**

69. (currently amended) The system of claim 67 wherein said acoustic receiver receives acoustic signals indicative of at least one of (i) a location of fluid front between the first well and the second well, and (ii) a fracture between the first well and the second well. .

70. **canceled**

71. (currently amended) The system of ~~claim 70~~ claim 69 wherein said signals are produced by a change in ~~said~~ a fracture in the earth formation.

72. **canceled**

73. **canceled**

74. (currently amended) A method of producing hydrocarbons from a subterranean reservoir comprising:

a) permanently installing at least one downhole fiber optic sensor in a first well;

(b) operably connecting at least one fiber optic sensor in a second well to the at least one fiber optice sensor in the first well;

wherein the first well is one of (I) an injection well, and (II) a production well and the second well is the other of (I) an injection well, and (II) a production well. ,

~~for sensing at least one parameter associated with injection of a fluid into said reservoir~~.

75. (currently amended) The method of claim 74 further comprising using an electronic controller operably connected to ~~said~~ at least one of the downhole fiber optic ~~sensor~~ sensors.

76. **canceled**

77. (currently amended) The method of claim 74 further comprising

(i) using at least one downhole acoustic signal generator for generating signals that interact with a flood front in said reservoir, and

(ii) receiving signals resulting from said interaction with ~~said~~ at least one of the downhole ~~sensor~~ sensors.

78. Canceled

79. (currently amended) The method of claim 75 further comprising positioning said electronic controller at one of (i) a surface location, and (ii) a downhole location.

80. **canceled**

81. **canceled**

82. (currently amended) The method of claim 76 further comprising operably connecting said at least one sensor in said first well to said at least one sensor in said second well by a fiber optic link.

83. (currently amended) The method of ~~claim 81~~ claim 74 further comprising using a controller for controlling a flow control device in at least one of the first well and the second well.

84. (previously presented) The method of claim 83 wherein said flow control device is selected from the group consisting of: (i) a valve, (ii) fluid control device, (iii) packer, (iv)sliding sleeve, (v) safety valve, (vi) an anchor, and (vii) a pump.

85. (currently amended) The method of ~~claim 81~~ claim 74 further comprising using an acoustic receiver in at least one of the first well and the second well for receiving acoustic signals.

86. (currently amended) The method of ~~claim 81~~ claim 74 further comprising using an acoustic transmitter in at least one of the first well and the second well for sending acoustic signals into said reservoir.

87. (currently amended) The method of claim 85 further comprising using said acoustic receiver for receiving acoustic signals indicative of at least one of (i) a location of a fluid front between the first well and the second well, and (ii) a fracture between the first well and the second well. .

88. **canceled**

89. (currently amended) The method of ~~claim 88~~ claim 87 wherein said signals are produced by a change in said fracture.

90. (previously presented) The method of claim 86 further comprising using said acoustic receiver for receiving acoustic signals indicative of a location of fluid front between the first well and the second well.

91. (previously presented) The method of claim 86 further comprising using said acoustic receiver for receiving acoustic signals indicative of a location of a fracture between the first well and the second well.

92. (currently amended) The method of ~~claim 81~~ claim 74 further comprising:

(i) using an acoustic transmitter in one of said two wells for propagating acoustic signals into said reservoir, and

(ii) using an acoustic receiver in the other of said two wells for receiving said signals after passing through said reservoir.

93. (previously presented) The method of claim 92 further comprising using a controller for processing said signals and determining from said received signals an indication of pressure transmissivity of said reservoir.

94. (previously presented) The method of claim 92 further comprising:

(A) using a controller for processing said received signals,

(B) using a controller for controlling the operation of a fluid control device in at least one of the first well and the second well.

95. (new) A downhole injection evaluation system comprising:

a) at least one downhole fiber optic sensor permanently disposed a first well for sensing at least one parameter associated with injecting a fluid into a formation; and

(b) at least one downhole acoustic signal generator whereby signals generated by said at least one signal generator interact with at least one of (I) a fluid front, and (II) a fracture and are received by said at least one downhole sensor.

wherein said first well is selected from (III) an injection well, and (IV) a production well.